
NAVY PUBLIC WORKS CENTER

NORFOLK, VIRGINIA

UTILITIES DEPARTMENT

STANDARD OPERATING PROCEDURE / JOB HAZARD ANALYSIS

TITLE

CHARGING SUBSTATION LEAD ACID BATTERIES

PROCEDURE NUMBER

WC 622 HVE 020

SIGNED:_____

(DATE)

APPROVED:_____

(DATE)

SAFETY PROFESSIONAL:_____

(DATE)

MANAGEMENT OFFICIAL:_____

(DATE)

REVISION A

DISTRIBUTION

CODE	REV/DATE	REV/DATE	REV/DATE	REV/DATE	REV/DATE	REV/DATE	REV/DATE
601.C3							
620							
622							
610.E1							
622.1							

REVISIONS

REV	DESCRIPTION	SIGNATURE	DATE
A	Initial Issue.		

CHARGING SUBSTATION LEAD ACID BATTERIES

Purpose:
Procedure to charge lead acid batteries using a battery charger.

Potential Energy Sources:
1. 24/48/125 volt DC battery bank.
2. Hydrogen gas from the battery cells.

Tools and PPE:
Tools: Insulated hand tools, Multimeter, and Hydrometer. PPE: Safety shoes, goggles, face shield, rubber apron, acid resistant gloves, Nomex coveralls.

References:
1. PWC Occupational Safety and Health Program Manual, PWCNORVAINST 5100.33E
2. Occupational Safety and Health Standards for General Industry (29 CFR PART 1910): Subpart I, Personnel Protective Equipment: Subpart N, Materials Handling and Storage - 1910.178(g)

Procedures:
Note - NO SMOKING IN BATTERY ROOM/AREA

1. Put on PPE. Wear Nomex coveralls only if the batteries are in the same room as 11.5/4.16 kv switchgear.

2. Check battery room, or work area, for obvious safety problems. Ensure the battery vent fan is operating.

3. Turn off the AC power to the battery charger.

4. Randomly pick a cell, or cells, and test it's(their) Specific Gravity. Check the voltage of the battery bank. Record the results for comparison checks during the charging operation. A Specific Gravity reading of 1200 to 1220 is usually an acceptable reading, however the manufacture's manual should be checked. The battery bank voltage should be within a few volts of the bank's rating, 125, 48, 24, etc.

5. Check the electrolyte level of the various cells. Fill to proper level if low.

6. Check that the cell ventilation caps are present and not clogged.

7. Check battery connections. Tighten any loose connections.

8. Turn on power to battery and place in equalize mode. At 1/2 hour intervals turn off the battery charger and check the previously picked cell's Specific Gravity and the battery bank's voltage. If the checks are not acceptable, turn charger back on and place in equalize. Repeat till checks are good.

9. After charging operation, leave battery charger on and in Float mode.

END